

Patent claims

1. Internal vibrator device (100), having

- an electric motor (2),
- a vibrator housing (1),
- an imbalance device (3, 4) situated in the vibrator housing (1) and driven by the electric motor (2) so as to be capable of rotation, and having
- a main switch (7) for switching the electric motor (2) on and off,
- the electric motor (2) being capable of being operated, in a normal operating state, with a rotational characteristic suitable for the compacting of liquid concrete,

characterized by

an operating state change device (6-1, 6-2, 8, 9, 10) by which the internal vibrator device (100) is able to be operated in a liberation operating state in which the rotational characteristic of the electric motor (2) differs from the rotational characteristic in the normal operating state, in such a way that by means of the operating state change device (6-1, 6-2, 8, 9, 10) the direction of rotation of the electric motor (2) is capable of being reversed automatically at periodic time intervals.

2. Internal vibrator device according to one of the preceding claims,

characterized in that

by means of the operating state change device (6-1, 6-2, 8, 9, 10) the direction of rotation of the electric motor (2) is capable of being reversed in relation to the direction of rotation in the normal operating state.

3. Internal vibrator device according to one of the preceding claims,

characterized in that

the operation of the electric motor (2) is capable of being interrupted at periodic time intervals by means of the operating state change device (6-1, 6-2, 8, 9, 10).

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4. Internal vibrator device according to Claim 6 or 7,

characterized in that

the time duration of the periodic time intervals is able to be fixedly predetermined, or is variable.

10 5. Internal vibrator device according to one of the preceding claims,

characterized in that

the rotational speed of the electric motor (2) is capable of being modified or is capable of being controlled by means of the operating state change device (6-1, 6-2, 8, 9, 10).

15 6. Internal vibrator device according to one of the preceding claims,

characterized in that

the vibrator housing (1), the electric motor (2), and the imbalance device (3) are combined to form a vibrator device, the vibrator device being capable of being made to pass through its natural frequency through a modification of the rotational speed of the electric motor (2).

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7. Method for freeing a jammed internal vibrator device (100), in which an imbalance device (3) in a vibrator housing (1) is driven by an electric motor (2), and, in a normal operating state, the electric motor (2) is operated with a rotational characteristic in order to compact liquid concrete,

characterized in that

25 alternatively to operation in the normal operating state, the electric motor (2) is operated in a liberation operating state in which the rotational characteristic of the electric motor (2) differs from the rotational characteristic in the normal operating state if an operator activates the liberation operating state.

8. Method according to Claim 11,

characterized in that

the rotational characteristic of the electric motor (2) includes at least one of the following
 5 parameters: direction of rotation, rotational speed, temporal change of the rotational speed,
 temporal change of the direction of rotation.

9. Method according to Claim 7 or 8,

characterized by

10 at least one of the following steps:

- reversal of the direction of rotation of the electric motor (2),
- predetermination of the direction of rotation of the electric motor (2),
- automatic changing of the direction of rotation of the electric motor (2),
- reversal of the direction of rotation of the electric motor (2) at periodic time intervals,
- 15 - interruption of the direction of rotation of the electric motor (2) at periodic time intervals,
- modification of the rotational speed of the electric motor (2).

10. Method according to one of Claims 7 to 9,

characterized in that

20 a vibrator device, comprising the electric motor (2), the vibrator housing (1), and the imbalance
 device (3), is made to pass through its natural frequency through a modification of the rotational
 speed of the electric motor (2).